

There are two sides to any economic equation – the supply side and the demand side.

Allowing for title pages and other non-core material there are about 70 pages in the Draft Regional Land Transport Plan about the supply side of roading and other land transport means. But there are just one and a half pages (Pages 78-79) which touch on the demand side of the equation – and most of that coverage is in respect to the mitigation of emissions. The Plan doesn't talk about planning for an increased demand or even about how to achieve a reduction in demand which might lead to a lower requirement for construction of new physical infrastructure or lower maintenance requirements of existing infrastructure.

Given the overall size of the expenditure – potentially close to eleven billion dollars over the next ten years - it is very important to have an accurate picture of what the future demand for land transport is, and what it is likely to be, and what it could be under slightly changed circumstances. Demand is what governs the need for new infrastructure and the maintenance needs of existing assets. A bit of sensitivity analysis would be a powerful tool to look at what the picture might be if demand for land transport is greater than currently forecast, or what would happen if it were naturally less, or could be reduced in other ways.

Demand factors which might be possible to influence include the overall volume of transport demand, where it is to and from, the mode, the time, and the intensity of use (eg vehicle factors influencing their damage to roads and occupancy of roads).

Design of roads and structures is generally done to cope with flow at a certain stage in the future. This usually means that for the first half of a road's economic life it is over capacity, and the second half it is under capacity, or faces high maintenance cost to maintain capacity. The cost of the ultimate capacity comes up front.

And the assessment of demand must not just extend for the ten year period, but for the design life of any infrastructure built or committed to during that ten year time. If a bridge has a design life of 50 years, there would be huge wasted investment if the bridge were no longer in demand after 25 years. If the design life of a railway corridor is 100 years, then we don't want to find that railways no longer run in 15 years' time, or even after 75 years.

In the light of factors such as these **I ask that a research component be added to the RLTP.**

In industry generally around 1% of expenditure is considered reasonable for research costs. On an eleven billion dollar budget that's probably too much to wish for (\$110 million over 10 years) but even a tenth of that – a million dollars a year for Canterbury-specific research – would go a long way towards good decision-making and the avoidance of mistakes.

Page 77 Health – there is no mention of the cost to health of accidents and crashes. A target for the 10-year plan should be, for example, elimination of crashes at railway crossings in Canterbury, and a substantial reduction in the seriousness and number of conventional car crashes. Yes local

authorities have some responsibility in crash area, and include it in their individual plans, but it is a regional problem as well as a local and national one. Could the Plan, for example, advocate for a zero alcohol driving limit in Canterbury? Or for lower speed limits for certain types of vehicle? (eg 80km/hr for motorcycles on SH75). Can the authorities involved plead in Court cases for stiffer penalties cases which involve irresponsible driving?

Can techniques be added to use best practice to reduce the risk and severity of crashes in Canterbury?

Michael de Hamel

Research topics

Uncontrollable demand factors

There are some things that can be predicted with certainty about the future of Canterbury – and the most important one is that there will be at least one ‘natural disaster’ during the design life of any infrastructure constructed now or currently existing. Most likely are earthquakes and cyclones. Floods across most of Canterbury are also possible in heavy rain following a major mountain range earthquake because of the amount of rock and other debris being brought through the gorges and down the rivers. Any roads or railway lines below about 10 metres above mean sea level will be at risk from the rough weather and storm surges associated with cyclones, particularly if river mouths get blocked. Yes, on Page 55 mention is made of resilience and improvements to bridges. What we discovered in the Canterbury earthquakes – and has been shown elsewhere – is the importance of the availability of alternative routes. At present large blocks of population could be isolated as a result of a relatively small tsunami or flood event. Pegasus, Waikuku and Woodend Beach settlements, Pines/Kairaki, Diamond Harbour and Akaroa from the Main Beach could all be isolated by a relatively small wave. Even getting assistance through to Redcliffs/Sumner would be difficult over the tortuous road via Lyttelton or the Summit Road.

Another risk is geopolitical. Canterbury ticks many of the boxes for a huge population increase when and if other countries need to displace population because of global warming, sea level, natural or political disasters.

Resilience – there is high importance, for example, of having transport options for evacuating Mackenzie area after an alpine fault earthquake, and of reaching isolated areas of North Canterbury or Banks Peninsula after a cyclone. Should there be an airstrip at Kaikoura of a standard which will accommodate a C130? Should a dune-top quadbike route be established between Kairaki and Woodend Beach – with an alternate vehicle access to meet it behind Pegasus?

Controllable demand factors.

These include peak flow reduction measures. eg adjusting work and school start times; cinemas persuaded to offer cheaper day time tickets – supermarkets could offer overall discounts at low congestion times – parking buildings could charge a premium for high traffic flow entry and exit

times – it would also be possible to do more to encourage multiple occupancy and multiple-purpose trips.

Amount of travel – where to and from and when and why. Location of population and work centres. Encourage businesses/activities with high numbers of people involved to locate close to population centres. When more health services were available at Princess Margaret and Burwood there were fewer parking problems (and road trips in the centre of the city) at the main hospital site in Hagley Park.

Motive forces. If electric power is to be the future, encourage Transpower to make sure that sufficient power is available for charging at points of origin and destination. Is there, for example, sufficient electricity delivery capacity near the new stadium in Christchurch to allow spectators to recharge their vehicles while attending an event for them to make the return journey home afterwards? Is the electrical capacity available to allow trucks to recharge on ferries or in Picton?